202206UECM3463OE4b

Start again

Review of preview

Started on	Thursday, 8 September 2022, 11:40 AM
Completed on	Thursday, 8 September 2022, 11:40 AM
Time taken	5 secs
Marks	0/8
Grade	**0** out of a maximum of 10 (**0**%)

1
Marks: 1

You fit a Pareto distribution with parametes α and θ = 90 to a sample of 280 claim amounts. You are given $\sum_{i=1}^{n} \ln(x_i+90) = 1485.64$. Determine the value of the Bayesian Information Criterion (BIC). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 3416.17479
Marks for this submission: 0/1.

2
Marks: 1

You fit a Gamma distribution to a sample of 90 claim amounts. You are given:

- The maximum likelihood estimates are $\hat{\alpha} = 3$ and $\hat{\theta} = 74.98$.
- $\sum x_i = 20244.99$
- $\sum \ln(x_i) = 473.66$

Determine the value of the Bayesian Information Criterion (BIC). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 1110.439619
Marks for this submission: 0/1.

3
Marks: 1

You fit various models for 31 loss observations using maximum likelihood. The fits maximizing the likelihood for a given number of parameters have the following loglikelihoods:

Number of parameters	Loglikelihood
1	-141.52
2	-140.03
3	-133.3
4	-130.1
5	-108.41

If BIC is the value of the Bayesian Information Criterion, and k is the number parameters in the selected models. Find BIC+k. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 239
Marks for this submission: 0/1.

4
Marks: 1

You are given a sample of 5 observations from Pareto(α, θ =1490) distribution:

1,784.62 2,279.43 1,491.06 1,680.98 1,571.95.

Determine the value of the Bayesian Information Criterion (BIC). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 89.919838
Marks for this submission: 0/1.

5
Marks: 1

You fit a Pareto distribution to a sample of 150 claim amounts. You are given:

- The maximum likelihood estimates are $\hat{\alpha} = 2.0$ and $\hat{\theta} = 7.2$.
- $\Sigma \ln(x_i+7.2) = 610.54$

Determine the value of the Akaike Information Criterion (AIC). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 2274.84
Marks for this submission: 0/1.

6
Marks: 1

You fit a Gamma distribution to a sample of 100 claim amounts. You are given:

- The maximum likelihood estimates are $\hat{\alpha} = 4$ and $\hat{\theta} = 88.86$.
- $\Sigma x_i = 35545.41$
- $\Sigma \ln(x_i) = 577.67$

Determine the value of the Akaike Information Criterion (AIC). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 1286.02
Marks for this submission: 0/1.

7
Marks: 1

You fit various models for 27 loss observations using maximum likelihood. The fits maximizing the likelihood for a given number of parameters have the following loglikelihoods:

Number of parameters	Loglikelihood
1	-141.58
2	-140.84
3	-139.39
4	-137.85
5	-136.81

IF AIC is the value Akaike Information Criterion (AIC), and k is the number parameters in the selected models. Find AIC+k. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 287.7
Marks for this submission: 0/1.

8

You are given a sample of 10 observations from the following distribution:

Marks: 1

$f(x) = 1/(2\theta^3)x^2e^{-x/\theta}$, $x>0$

x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}
104.57	131.88	34.78	77.56	65.81	73.76	140.04	62.77	134.94	260.22

Determine the value of the Akaike Information Criterion (AIC). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 111.34

Marks for this submission: 0/1.